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PATENT APPLICATION

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**RESPONSE UNDER 37 CFR §1.116**  
**EXPEDITED PROCEDURE**  
**TECHNOLOGY CENTER ART UNIT 3748**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Toshiaki ASADA

Group Art Unit: 3748

Application No.: 10/644,867

Examiner: K. Riddle

Filed: August 21, 2003

Docket No.: 116176

For: VALVE TRAIN SYSTEM OF INTERNAL COMBUSTION ENGINE AND CONTROL  
METHOD THEREOF

**REQUEST FOR RECONSIDERATION AFTER FINAL REJECTION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In reply to the July 25, 2005 Office Action, Applicant requests reconsideration of this application. Claims 1-22 are pending.

Claims 1-3, 9, 13 and 14 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,682,854 to Ozawa. This rejection is respectfully traversed.

Ozawa does not disclose or suggest "after an intake stroke, opening and subsequently closing an exhaust valve to introduce exhaust gas into the combustion chamber" when it is determined that it is possible to improve the fuel consumption, as recited in independent claims 1 and 9. On page 5, lines 1-4 of the Office Action, the Examiner states that the Examiner "made an error in the last office action, paragraph 3, by incorrectly identifying the exhaust valve 35 opening and closing after the intake valve 33 closes, instead of the correct

intake valve 32, which may have caused some confusion." However, the current Office Action still refers to intake valve 33 in the 35 U.S.C. §102(b) rejection. See page 2, paragraph 2 of the Office Action. Thus, the Examiner's comments on page 5, lines 1-4 do not clarify any "confusion," but rather create confusion.

In any event, as described in Applicant's previous response and as apparently acknowledged by the Office Action, exhaust valve 35 of Ozawa does not open and close after the intake valve 33 closes, but as is clear from the Ozawa description and drawings, the exhaust valve 35 opens and closes while the intake valve 35 is open. Moreover, and as acknowledged in the last paragraph on page 3 of the Office Action, the exhaust valve 35 also does not open after the intake valve 32 closes (the Office Action acknowledges that there is overlap between curves B21 and C2 in Ozawa Fig. 14).

Thus, Ozawa does not disclose all features of independent claims 1 and 9, and thus does not anticipate these claims. Withdrawal of the rejection under 35 U.S.C. §102(b) is requested.

Claims 1-22 stand rejected under 35 U.S.C. §103(a) over Ozawa. This rejection is respectfully traversed.

The differences between Ozawa and independent claims 1 and 9 are discussed above. As discussed in Applicant's previous response, Ozawa does not disclose or suggest starting the admission of the exhaust gas into the combustion chamber after the intake stroke, as recited in independent claims 5 and 10. Rather, Ozawa starts admitting the exhaust gas during the intake stroke as is clear from Fig. 14. The Office Action asserts that "Figure 14 [of Ozawa] shows only an insubstantial overlap [between curves B21 and C2] that can obviously be eliminated." See item 6 on pages 4-5 of the Office Action. This section of the Office Action also explains that the Examiner is interpreting the claim feature "in its broadest sense

to include the exhaust valve 35 opening after the opening and closing of the one intake valve 32."

The Examiner's assertions are factually and legally erroneous. First, and as acknowledged in the Office Action, the exhaust valve 35 does not open "after the opening and closing on the one intake valve 32." There is overlap between the curves B21 and C2, which undeniably means that the exhaust valve 35 opens while the intake valve 32 is still open. Second, the Office Action provides no factual support for its conclusion that the overlap between the curves B21 and C2 is "insubstantial." As described in Applicant's specification, by providing no overlap between the air intake and EGR processes the inert exhaust gas is inhibited from mixing with the intake air. Third and most important, the Examiner's decision to ignore the air intake through valve 33 of Ozawa is erroneous. The claims of this application relate to the intake into a combustion chamber, not an intake through a single intake valve. The air intake that occurs through both valves 32 and 33 of Ozawa is all part of the air intake stroke, and one having ordinary skill in the art would understand Ozawa in only this way.

Because the open state of exhaust valve 35 completely overlaps the open state of intake valve 33 (in addition to partially overlapping the open state of intake valve 32) Ozawa does not disclose or suggest "after an intake stroke, opening and subsequently closing an exhaust valve to introduce exhaust gas into the combustion chamber" when it is determined that it is possible to improve the fuel consumption, as recited in independent claims 1 and 9, or "starting the admission of the exhaust gas into the combustion chamber after the intake stroke," as recited in independent claims 5 and 10. The Office Action has failed to establish a *prima facie* case of obviousness with respect to the independent claims of this application. Withdrawal of the rejection under 35 U.S.C. §103(a) is requested.

In view of the foregoing, Applicant respectfully submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicant's undersigned attorney at the telephone number listed below.

Respectfully submitted,



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Date: October 11, 2005

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